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Child Abuse Risk Prediction and Prevention Framework Using Ai and Darkweb

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ABSTRACT: Child violence is one of the most atrocious crimes induced in our society. Child Sexual Abuse (CSA) has only recently been publicly admitted as a problem in India. Approximately one case every 12 minutes and 5 children die every day as a result of child sexual abuse. Abusers can be neighbours, friends and family members. Any mode of abuse or ferocity to a child does and cannot be overlooked. It affects the constitute mental health of a child so deeply that it influences his/her later life. Before it transpires, exorbitanting child sexual abuse has become a censorious issue and fundamental endeavour from all areas of society: family loving, school specification, community-based approach, and social merits. So, enchanting conventional measurements for saving every child from any category of violence is must. An innovative Sexual Intention learning strategy to battle child sexual abuse is proposed to reduce juvenile delinquency on the dark web. This project proposes a modified deep learning-based LSTM algorithm which is used for sexual intention detection and prevents the child from abuse by not allowing the child to visit the place or with that person. This CAP API will be able to detect and alert child exploitation in real-time without any privacy breach. Risk prediction is based only on the web browsing of users. Child Abuse analysis is based on a telemetry dataset provided by a major Network Service Provider. CAP has been confined to prevent sexual offenses against children on the dark web and artificial intelligence. An innovative sexual intention learning strategy to battle child sexual abuse is proposed to reduce juvenile delinquency on the dark web. Every child, parents, teachers or social worker who works with children should realize what child sexual abuse is and prevent it.

Keywords: Child abuse, Prevent, Sexual assault, Dark web, Safety, Detection.

I. INTRODUCTION

India is central to a large number of sensually perverted children. In 2020, the National Crime Records Bureau recorded 43,000 misdemeanour under the stringent POSCO (Protection of Children from Sexual Offences) Act - which translates to an average of one case every 12 minutes. People who sexually abuse children can be found in families, schools, churches, recreation centres, youth sports leagues, and any other place children gather. About 90% of children who are suffered of sexual abuse know their abuser. Only 10% of sexually abused children are abused by a intruder. About 60% of children who are sexually mistreated are misused by people the family faith. The past decade has seen expeditious development and exponential extension in the work of electronic, computer-based communication and information sharing via the Internet, particularly across the Western world. Clearly there are many assets that result from Internet convention, but until recently there has been little esteemation of the dangers that may also outcome from the use of such technology. The Internet has enlarged the possibilities for teens to entrance sexually explicit imagery and has apportioned new avenues for castigation and exploitation. Internet sex obsession demonstrates various behaviours: reading titillating stories, observing, downloading or dealing online pornography, online venture in adult fantasy chat rooms, cybersex relationships, self-grantification while engaged in online activity that put up to one's sexual arousal, the search for offline sexual partners and information about sexual activity. The obtainability of universal public access to the

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World Wide Web in late 1990s led to the growth of internet pornography.

As of 2011 the majority of viewers of online pornography were men; women intacted to prefer romance novels and erotic fan fiction. It says a lot of child abuse content is communal in closed chat rooms on the dark web. The defiances of averting, ascertaining and summoning child sexual abuse – especially given its unrivalled global scale and complexity – require technological solutions. This is where AI can bring its solidity to the fight. AI can draw conclusions, problems or take actions by analysing options and clarify reasoning without the need for hard-coded instructions for each and every scenario. It builds its intelligence by learning from historical data, using statistical analysis.AI can conduct analysis and provide decision recommendations at a scale, speed and depth of detail not possible for human analysts.

II. LITERATURE SURVEY

The adult content detection is an important and challenging task especially with the large amount of freely available content on the web as it involving filtering the adult image and then blur those image reaches to the end user .Also, many films production boards have implemented rating model for movies so that viewers can come to know about the presence of adult content in those films. In this model, the pornographic images will be detected on the basis of the percentages of skin exposed in those images. Thereafter, if found that, the image is porn then the images will be blurred. This will ensure that the end user is not able to see any porn images if it suddenly pops out while surfing the internet.

The proposed approach is completely based on machine learning. The entire classification of image whether porn or not is completely based on the amount of skin percentage being exposed in the images. The Support Vector Machine (SVM) algorithm is used for the classification of images whether porn or not. The SVM algorithm works on the basis of a hyper plane which separates the data points of the two classes. The hyper plane is also called as decision boundary as it decides to which class the new data belongs to. The hyperplane selected is such that it should have the maximum margin i.e., the width of the margin should be maximum. This is taken into consideration as the maximum margin hyper plane helps to classify the future data points accurately whether porn or not. The dataset we have is non-linear in nature therefore we will be using Non-Linear SVM and kernel function. The kernel functions task involves converting the low dimensional feature space into high dimensional feature space. While providing the data to kernel function as an input the data is in non- separable form and when this data is being converted into high dimensional feature space then it becomes separable and the data can be classified.

Further after classifying the images into porn or not then using image processing technique the porn image is then coloured black completely by converting the RGB color model into the HSV color model so the end user won't be able to see such content. Thus, the model works on the basis of classification algorithm SVM and further if the image is found to be porn, then it will be turned black thus, ensuring the safety of kids while browsing on the web and also it helps an individual to have smooth user experience while using social media sites.

The adult content detection model can be used to protect children from getting exposed to widely available adult content on the internet. It can also be used as a model that works similar to child mode on a mobile phone except here the child will not even see the image. The API of this model can be used in any website or android application so that whatever the content or advertisements pertaining adult content will automatically get blurred. The Youtube kids work in a similar way.

III. PROPOSED SYSTEM

The URL-based illegal detection methods do not need to access the page content of a website before making a decision, and as such, it has the advantage of a fast detection speed. The Proposed System CARP was designed to automatically detect and filter gambling and pornographic websites and predict the sexual intention of the user on the Internet using a Deep learning technique. Usually, the user enters a URL in the browser to retrieve specific information.

The intelligent technique with the proposed CARP acts as a real-time website to check out the user's access request and predict the intention. Given a URL to be detected, the proposed system first compares this URL with the URL blacklist and white list libraries. If the URL already exists on the URL blacklist or white list library, the system identifies the website category directly without further content analysis. This step can greatly save the detection time of the system.

After the blacklist and white list screening, for the detection of unknown URLs, the proposed web content filtering system will perform the following steps: Access the URL and then obtain the website source code and website content of the corresponding website via web crawling and

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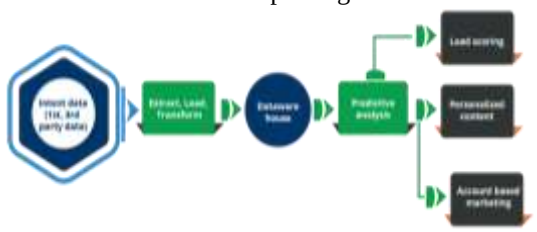
scrapping. Extract the textual and content features from website source code and website screenshots, respectively. Use the corresponding LSTM classifier to make preliminary predictions for these two types of features. Employ the decision mechanism to judge and output the final website category and then add this URL to our URL blacklist or white list for updating.



Flow Diagram

Network Censorship Updater:

Network censorship is to actively modify network users' experience in order to restrict behaviours to some extent. One of the most popular network censorship actions is to add several IP addresses or domain names into the blacklist and prevent users from visiting those websites. By leveraging data analysis for the network users' behaviours when facing network censorship, we collect a lot of useful information and utilize it to add or delete members from the blacklist. We think this network censorship design can be more effective than static censorship with respect to filtering forbidden information and retaining qualified candidates.

Sexual Intention Indicator

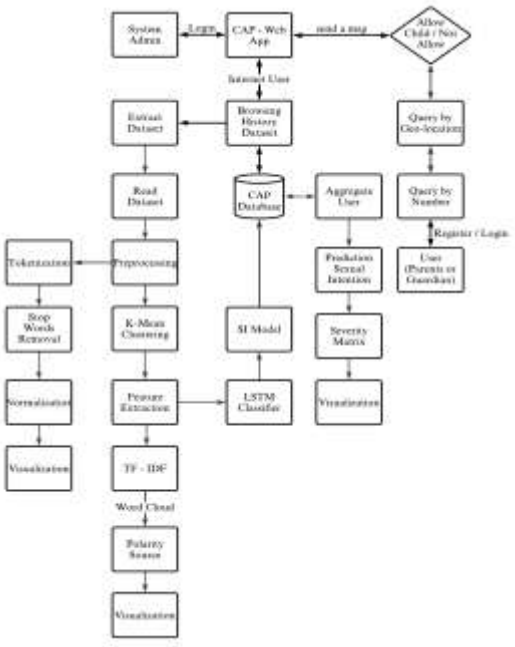
- **User Request Inter-arrival Time** - We characterize the user request arrival process in terms of its Inter-arrival time (IAT)distribution Comparing different adult websites, we observe that video adult websites have shorter request IATs as compared to image-heavy adult websites. For video objects in adult websites, the median request IAT is less than 10 minutes, whereas it is more than 1 hour for image-heavy adult websites. We later use these observations for estimating user session lengths.

- **User Session Length** - A key metric from the perspective of content publishers and CDNs is user engagement, which is typically quantified in terms of website bounce time. From the network-side logs, we can estimate user engagement in terms of user session length,1 where a session consists of consecutive user requests within a timeout interval. We set the timeout value for user sessions at 10 minutes based on our earlier analysis of user request IAT distributions.

- **User Addiction** - To further investigate user engagement, we next analyse user addiction. We analyse repeated content accesses by a user to investigate content addiction. For each object, we compute the total number of requests and the total number of unique users who make these requests.

Advantages

- The proposed methods can improve the efficiency and performance of classifiers.
- A website was developed using the proposed methods to predict sexual intention person.
- Highest predictive accuracy.
- System is highly scalable and collects data in real time
- Porn Intention Indicator to measure of adultness of the page
- Black listing is used to find porn url.
- Calculating the probabilities of the specific users
- Extract robust and effective features
- Obtain the following information about client devices from DNS traffic
- Fine-grained webpage fingerprinting and low training overhead.



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Abbreviation: CAP-Child Abuse Prediction SI-Sexual Intention LSTM-Long Short-Term Memory TF-IDF-Term Frequency-Intense Document Frequency

Concept Flow Diagram

IV. CONCLUSION

Child sexual abuse and assault currently affect 1 in 4 girls and 1 in 20 boys in the India. The effects of child sexual abuse and assault are traumatic, long-lasting, and costly. Although rates of sexual abuse declined during the 1990s, they have plateaued in recent years, suggesting a renewed effort is needed to protect children. Preventing child sexual abuse requires a collective effort to further understand the causes of child sexual abuse and approaches to tackle it. Experts are skeptical about the use of AI in mitigating child sexual abuse. We propose a framework for training and evaluating deployment-ready deep learning models for CSA Prevention. Our framework provides guidelines to evaluate CSA prevention-models against intelligent adversaries and models' performance with open data. The CAP API provides a LSTM based sexual intention predictor for internet user that aid in reducing or preventing sexual violence. Experiments with open datasets confirm that the model generalizes well and is deployment-ready.

V. FUTURE ENHANCEMENT

To move forward, we need (i) more evidence of the effectiveness of current interventions in preventing CSA, (ii) to better understand parents' behaviors related to CSA protection, and (iii) to design and evaluate new innovative approaches to reducing the risk of CSA, including approaches that focus on parenting as protection.

REFERENCES

[1]. Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. Journal of Adolescent Health, 55(3), 329–333.

[2]. Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

[3]. Fang, X., Brown, D. S., Florence, C. S., & Mercy, J. A. (2012). The economic burden of child maltreatment in the United States and implications for prevention. Child Abuse & Neglect, 36(2), 156–165.

[4]. World Health Organization. (2002). World Report on Violence and Health, Chapter 6: Sexual Violence. Accessed: Jun. 1, 2021. [Online].

[5]. N. Borumandnia, N. Khadembashi, M. Tabatabaei, and H. A. Majd, ``the prevalence rate of sexual violence worldwide: A trend analysis," BMC Public Health, vol. 20, no. 1, pp. 1-7, Dec. 2020.

[6]. M. Mazza, G. Marano, C. Lai, L. Janiri, and G. Sani, ``Danger in danger: Interpersonal violence during COVID-19 quarantine," Psychiatry Res., vol. 289, Jul. 2020, Art. No. 113046.

[7]. M. Lotfollahi, M. J. Siavoshani, R. S. H. Zade, and M. Saberian, ``Deep packet: A novel approach for encrypted traffic classification using deep learning," Soft Comput., vol. 24, no. 3, pp. 19992012, Feb. 2020.

[8]. P. Wang, F. Ye, X. Chen, and Y. Qian, ``Datanet: Deep learning based encrypted network trafc classification in SDN home gateway," IEEE Access, vol. 6, pp. 5538055391, 2018.

[9]. G. Aceto, D. Ciuonzo, A. Montieri, and A. Pescape, ``Mobile encrypted traffic classification using deep learning," in Proc. Netw. Traffic Meas. Anal. Conf. (TMA), Jun. 2018, pp. 1-8.

[10]. Z. Fan and R. Liu, ``Investigation of machine learning based network traffic classification," in Proc. Int. Symp. Wireless Commun. Syst. (ISWCS), Aug. 2017, pp. 1-6.

[11]. Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. Journal of Adolescent Health, 55(3), 329–333.

[12]. Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.